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RHINOBATUS FEEDING

In mid-April of this year we had a series of very low tides at Palm Beach, Florida, coincident with nearly a week of hot scorching days, still and calm. During this time the surf at bottom ebb subsided to such tiny wavelets that one might walk along the beach just next to the little declivity which marked dead low tide and observe the small fish and crabs in the clear, almost unruffled water. Twice I saw full-grown individuals of *Rhinobatus lentiginosus* apparently feeding right at the ocean's margin. They wiggled along, dorsals and caudals clear of the water and every few moments they would poke their snouts up onto the little foot-hight shelf that was just wet by the small advancing and receding billows. As I had no grains, I could not spear the fish and had to be content to watch this strange performance as they moved slowly northward. Upon what they were feeding I do not know, but suspect it may have been Sand Fleas or Hippa. I have walked the beach so often that I am moved to record this incomplete observation which was to me quite novel. Off the Florida coast *Rhinobatus* is common but usually in about five to ten fathoms.

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THE TROUT OF THE RIO GRANDE

In the nomenclature of Trout as adopted by Jordan and Evermann (Bulletin U. S. Nat. Mus. 47, I, 495) an error has crept in which needs correction. The Rio Grande Trout should stand as *Salmo virginalis* Girard, instead of *Salmo spilurus* Cope, while the Trout of the Bonneville Basin, called *Salmo mykiss virginalis* in the text, if worth distinguishing from the Cut-throat Trout of the Northwest should be *Salmo utah* Suckley.

The error came from the confusion of the type locality of *Salmo virginalis* Girard, which is Utah Creek near Wagonwheel Gap, Colorado, not Utah Lake. Utah Creek is a tributary of the Upper Rio Grande, with no relation to Utah Lake or to the State of Utah. On recent maps this is put down as Ute Creek. Most of the forms treated as sub-species by Jordan and Evermann should stand as distinct species; *Salmo lewisi* is the same as *Salmo clarki,* and the name *clarki* should replace *mykiss;* the true *Salmo mykiss* being a Kamchatkan species, different from anything in the United States. In the cut-throat series (those trout with a bright red area under the throat) *clarki, virginalis, henshawi, pleuriticus, stomias* and *macdonaldi,* at least, must be regarded as distinct species. In the rainbow series (trout red along the sides, without well marked red gash at the throat), the Steelhead (*gairdneri* or *rivularis*) is a sea-run form of *Salmo irideus.* The Shasta Rainbow (the Rainbow Trout of most hatcheries) seems a different species, as are also *Salmo gilberti* of the San Joaquin, *Salmo aguabonita, S. roosevelti* and *S. whitei* of the upper Kern, and *S. crescentis, S. beardsleei* and perhaps some others of the Olympic peninsula of Washington.

The dwarf Southern races, *Salmo evermanni* of the San Bernardino mountains and *Salmo nelsoni* of San Pedro Martir in Southern California should be considered as valid species.

We may well recognize the subgenus *Trutta* L. as a valid genus, as distinguished from the Atlantic Salmon (*Salmo salar*), the distinction lying in the vomerine teeth as well as in the general habit. The Pacific Salmon (*Oncorhynchus, Hypsifario*) differ widely from both.

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A LEIOCEPHALUS MISNAMED

In 1916, my friend, Mr. L. L. Mowbray, collecting about the Turks Islands, sent me a series of Leiocephali from Bastion Key. These proved to be unrecognized, and they were named *Leiocephalus arenarius* Barbour (Proc. Biol. Soc. Wash., 29, 1916, p. 217). By a stupid oversight this name was given in spite of the fact that Tschudi in 1845 (Fauna Peruana, Herp., p. 25) named *Steironotus arenarius* from Huacho, Peru, which seems to belong to this same genus. Therefore, I propose *Leiocephalus psammodromus* as a substitute. Type M. C. Z. 11948, from Bastion Key, Turks Island, L. L. Mowbray collector.

THOMAS BARBOUR,
Cambridge, Mass.

SOME REPTILE RECORDS FROM NEW ENGLAND

The following list was published by the writer in a recent number of the Bulletin of the Boston Society of Natural History, containing species reported from New England but not represented in the Society's collection.

Testudinata: 1. Green turtle, *Chelonia mydas* (Linn.) Marine. 2. Hawksbill turtle, *Eretmochelys imbricata* (Linn.) Marine. 3. Geographical terrapin, *Graptemys geographica* (Lesueur) Lake Champlain, Vt. 4. Spiny soft-shelled turtle, *Amyda spinifera,* Lesueur, Lake Champlain, Vt. 5. Mud turtle, *Kinosternon subrubrum* (Lacepede), Connecticut.

Sauria: 1. Pine lizard, *Sceloporus undulatus* (Latreille) Connecticut. 2. Striped lizard, *Cnemidophorus sexlineatus* (Linn.) Connecticut.

Serpentes: 1. Keeled green snake, *Opheodrys aestivas* (Linn.) Connecticut and Mass. 2. Fox snake, *Elaphe vulpina* (Baird & Girard) Rhode Island and Mass. 3. Pilot black snake, *Elaphe obsoleta obsoleta,* Say. N. H., Mass., Conn. 4. Chain snake, *Lampropeltis getulus* (Linn.) Connecticut. 5. Yellow-bellied snake, *Natrix septemvittata* (Say.) Connecticut. 6. Brown snake, *Potamophis striatulus* (Linn.) Massachusetts.

This list invites comment. All of the species mentioned have appeared in some one or more of the published lists of reptiles either of the individual states or of New England as a whole. For most of them, only a single record exists, which in some cases, seems open to question.

Of the turtles, the first four are of undoubted occurrences in New England. The mud turtle perhaps is doubtful. Linsley, in his catalogue of the reptiles of Connecticut (1843) reports one from Stratford. It also occurs in Dr. Smith's list of reptiles in Hitchcock's report on the geology, mineralogy, botany and zoology of Massachusetts (1833). This record was later questioned by Holbrook, who thought it was confused with *K. odoratum.*

The pine lizard, *Sceloporus undulataus,* occurs only in Linsley's catalogue. He states that DeKay reports it from Dutchess and Putnam counties in New York "and as these join almost the whole western line of Connecticut, it scarcely admits a question that the animal has just claim to insertion here." But until a definite New England record comes to light, this lizard should not be included. The striped lizard, *Cnemidophorus sexlineatus,* reported by E. Smith (1899) as a "hearsay" record from Connecticut, occurs normally from Maryland to Florida.

The chain snake, *Lampropeltis getulus,* is listed by Linsley, who says: "I am informed by Mr. Nettleton

of Orange, that he has seen the chain snake in Milford. As he is an observing man, possessed of good judgment and quite a taste for natural history, I have inserted it here." Of the yellow-bellied snake, *Natrix septemvittata,* the same author says:

"Mr. Nettleton assures me that he has killed a yellow-bellied snake in the town of Orange," and "Mr. Lawrence, also of Canaan, Litchfield Co., an observing gentleman, is sure he has killed this snake in that town." The range of the last-mentioned snake as given in Stejneger and Barbour's Check List of North American Amphibians and Reptiles (1917), which represents the most careful compilation of data on this subject we possess is: "Central, Eastern and Gulf States from Pennsylvania, Ohio and Wisconsin southward."

The brown snake, *Potamophis striatulus,* is given in Dr. Smith's list in Hitchcock's report (1833) as occurring in Massachusetts, but with no additional data. The range of this snake in Stejneger and Barbour's Check List is given: "Virginia and Minnesota southward to the Gulf States."

The fox snake, *Elaphe vulpina,* is listed from Rhode Island by Drowne (1905), who says: "Reported from vicinity of Providence, R. I." The range given in the above-mentioned Check List is: "Indiana, Iowa and Illinois to Michigan and Minnesota." There is, however, one specimen of the fox snake in the Museum of Comparative Zoology at Cambridge taken at Wenham, Essex Co., Massachusetts in 1861 by Mr. James Bartlett (M. C. Z. No. 796), and examined at that time by Mr. F. W. Putnam of Salem.

The pilot black snake, *Elaphe obsoleta obsoleta,* has been reported from New Hampshire, Massachusetts and Connecticut. J. A. Allen (Cat. of Reptiles and Batrachians found in the vicinity of Springfield, Mass.—1868), says it is "apparently not rare along the Connecticut (River) in this State, from Longmeadow to Mount Tom." It seems to range up the

Connecticut Valley into New Hampshire, but has not been taken in eastern Massachusetts.

Ditmars in a paper on the snakes found in the vicinity of New York City (1896), reports the keeled green snake, *Opheodrys aestivus* as "quite common" in Plymouth, Litchfield Co., Connecticut. There is a specimen of this species in the Springfield (Mass.) Museum (No. 22), labeled "Springfield" and one in the Philadelphia Academy of Natural Sciences (No. 5695), marked "Massachusetts." The range of this snake in eastern United States is given "New Jersey to Florida, * * *."

It would seem, therefore, that the chain snake, yellow-bellied snake and brown snake were of doubtful occurrence in New England, while the keeled green snake, fox snake and pilot black snake occurred casually. New England also seems well out of the range of the striped lizard, which inhabits sandy situations farther south.

It is unfortunate that records based on insufficient or inaccurate observations find their way from time to time into faunal lists, even though reported by "observing gentlemen" with "quite a taste for natural history," as it is much easier to get them in than to get them out. Sight records with reptiles have less claim for recognition than with birds owing to the lesser difficulties which capturing the former entail. Fortunately the famous "Sea Serpent," *Scoliophis atlanticus,* a black snake with a diseased spine, has been, as Allen says, "satisfactorily disposed of."

Field work on these doubtful New England species is very much worth while and the writer would greatly appreciate any information from members collecting in this region.

HAROLD L. BABCOCK,
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A SPADEFOOT IN SUMMER

On August 14, 1918, I captured a spadefoot (*Scaphiopus holbrookii holbrookii*) in the basement of my

house in Douglaston, Long Island, which is inside Greater New York. It was taken in a small cavity in the damp earth, which it had probably made, in a break in the concrete on a level with the floor. It was in excellent condition, and apparently it was fully grown. We had seen it hopping about at night several days previous to this, but we do not know how long it had been in the cellar, or how it got there.

For several weeks we kept it in a large box of earth. At night it was generally out on top and active, but in the day time it was usually underneath the soil. It would always dig in backwards, making good use of the horny processes or "spades" on the hindfeet. It was surprising how quickly it could burrow out of sight.

On the night of October 12, it sang a few times without being disturbed. How these notes would compare with the mating song described by Dr. Overton (Long Island Frogs and Toads, Brooklyn Inst. Museum Science Bulletin, Vol. 2, No. 3), I am unable to say. It would usually sing or squawk when tickled on the throat or breast.

While in captivity it was fed mainly upon earthworms. It also ate a gresshopper and a cricket or two. It is remarkable how it would always close its eyes when swallowing, and this seemed to be an important and necessary part of the act. When open, the eyes bulge out prominently, but when closed they are drawn back until they do not bulge at all. When the eyes are thus retracted, the roof of the mouth is lowered and this doubtless helps to force food down the throat in swallowing.

This specimen dug in on October 13 and stayed in, so far as we could tell, until dug out by us on October 21. It dug in on October 21, and was not seen again until October 27, on which date it ate an earthworm.

On October 27, in order to make an experiment upon its hibernation, it was placed out-of-doors, but unfortunately it escaped the first night and was not seen again.

Since I am not a herpetologist it may be well to state that I showed this specimen to Miss Mary C. Dickerson, W. DeWitt Miller, and J. T. Nichols, naturalists of the American Museum. So there can be no doubt as to the identification. Among other things the fact that the lenticular pupil of the eye is vertical instead of horizontal, as in our common toads, was noted.

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